

Title (en)  
ELECTRON TUBE

Title (de)  
ELEKTRONENRÖHRE

Title (fr)  
TUBE ELECTRONIQUE

Publication  
**EP 1154457 A4 20030122 (EN)**

Application  
**EP 99900652 A 19990121**

Priority  
JP 9900212 W 19990121

Abstract (en)  
[origin: EP1154457A1] In an electron tube 1, a space S between a periphery part 15b of a semiconductor device 15 and a stem 11 is filled with an insulating resin 20. The insulating resin 20 functions as a reinforcing member while the electron tube 1 is assembled under high-temperature condition, thereby preventing a bump 16 from coming off a bump connection portion 19. Since the space S is only partly closed by the resin 20, the space between the semiconductor device 15 and the stem 11 is ensured a ventilability. That is, no air reservoir is formed between an electron incidence part 15a at the center of the semiconductor device 15 and the surface C of the stem 11, whereby air expanding at high temperature does not damage the electron incidence part 15a of the back-illuminated semiconductor device 15. <IMAGE>

IPC 1-7  
**H01J 29/44**; H01J 31/26; H01J 31/49; H01L 27/14; H01J 29/92

IPC 8 full level  
**H01J 29/92** (2006.01); **H01J 31/26** (2006.01); **H01J 31/49** (2006.01)

CPC (source: EP US)  
**H01J 29/92** (2013.01 - EP US); **H01J 31/26** (2013.01 - EP US); **H01J 31/49** (2013.01 - EP US); **H01J 2229/922** (2013.01 - EP US); **H01J 2231/50068** (2013.01 - EP US)

Citation (search report)

- [A] FR 2629946 A1 19891013 - LABO ELECTRONIQUE PHYSIQUE [FR]
- [A] US 4178529 A 19791211 - KENNEDY ANDREW J [US]

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EP1672693A4; EP1672695A4; EP1907159A4; EP1672694A4; FR2898216A1; NL1033467C2; FR2898217A1; NL1033468C2; EP1745506A4; EP3089208A1; US7608533B2; WO2005031872A1; US7696595B2; US7612442B2; WO2005031870A1; US7607560B2; WO2007015965A2; US7605455B2; WO2005031871A1

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